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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/803,223	03/16/2004	Hitoshi Kitagawa	ALPSP148	5643

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EXAMINER

CHANG, AUDREY Y

ART UNIT	PAPER NUMBER
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2872

DATE MAILED: 04/25/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/803,223

Applicant(s)

KITAGAWA, HITOSHI

Examiner

Audrey Y. Chang

Art Unit

2872

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>3/16/2004</u> | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Claim Objections

1. **Claims 1-8 are objected to because of the following informalities:**

(1). The phrase “alternatively stacked” recited in claim 1 is confusing since it is not clear what is being “alternatively stacked” here. The *alternation* is referred to what? Is it refereed the alternation in the refractive indices of the dielectric layers or not?

Appropriate correction is required.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. **Claims 1, 3, 6, 7 and 8 are rejected under 35 U.S.C. 102(b) as being anticipated by the patent issued to Chung (PN. 5,212,584).**

Chung teaches a *tunable etalon filter* that is comprises a *substrate* (10, Figure 1) and a *multilayer film* (12 or 22, Figure 1, 44 or 46 Figure 2) including a *plurality of dielectric thin-film layers* having high and low refractive indices that are *alternatively stacked* on at least one surface of the substrate. **Chung** teaches that the etalon filter further comprises a *spacer layer* (22 or 42) whose refractive index is

Art Unit: 2872

thermally adjusted so that the etalon filter is thermally tuned such that the temperature shift of the wavelength of the transmitted light is adjusted, (please see column 2).

With regard to claims 3 and 7, Chung teaches that the multilayer film may include ZnS, ThF₄, SiO₂ and Si as low and high refractive index thin film layers and the spacer layer can be either of ZnS or Si which is the *same* material as one of the high and refractive index layer, (please see column 3 lines 30-35, column 4 line 30-35, and column 5 lines 1-12).

With regard to claim 6, Chung teaches that the spacer layer may has a thickness of 16.5 micrometer, (please see column 4, line 47).

This reference has therefore anticipated the claims.

4. Claims 1, 2, 3, 7 and 8 are rejected under 35 U.S.C. 102(b) as being anticipated by the patent issued to Stowell et al (PN. 5,851,679).

Stowell et al teaches a *multilayer dielectric stack coating* that is comprises a *substrate* (22, Figure 2) and a *multilayer film* including a *plurality of dielectric thin-film layers* (26, 28 and 30) having high and low refractive indices that are *alternatively* stacked on at least one surface of the substrate. Stowell et al teaches that the multilayer dielectric stack coating further comprises a *thermal barrier coating* (24) that is interposed between the substrate and the multilayer film for preventing the heat entering the multilayer film which serves as the adjusting layer for preventing therefore adjusting the temperature shift of the wavelength of the light filtered by the coating system.

With regard to claims 3 and 7, Stowell et al teaches that the multilayer film may include TiO₂, ZrO₂, SiO₂, Ta₂O₅ and HfO₂ as high and low refractive index thin film layers and the thermal barrier coating layer can be of zirconia (i.e. ZrO₂) which is the *same* material as one of the high and refractive index layer, (please see column 3 lines 55-65, and column 4 line 12-15).

This reference has therefore anticipated the claims.

5. Claims 1, 3, 4, 5, 7 and 8 are rejected under 35 U.S.C. 102(e) as being anticipated by the patent issued to Gaebe (PN. 6,600,604).

Gaebe teaches an *athermal thin film filter* that is comprised of a *substrate* (105, Figure 1 or 605 of Figure 6) and a *multilayer* film (115, 120 of Figure 1 or 615, or 620 of Figure 6) including a *plurality of dielectric thin-film layers* (130 and 132 or 630 and 632) having high and low refractive indices that are *alternatively* stacked on at least one surface of the substrate. Gaebe teaches that the *substrate* of the thin film filter *serves* as an *adjusting layer* such that it adjusts the temperature related wavelength shifts by reducing such shift, (please see column 3, lines 6-14).

With regard to claims 3 and 7, Gaebe teaches that the multilayer film may include SiO₂, and Ta₂O₅ as low and high refractive index thin film dielectric layers and the substrate or the adjusting layer can be of quartz (i.e. SiO₂) which is the *same* material as one of the high and refractive index layer, (please see column 3 lines 20-25, and column 2 lines 53-65).

With regard to claim 4, Gaebe teaches that more than one substrates or more than one adjusting layers may be included, (please see Figure 6).

With regard to claim 5, Gaebe teaches that other materials may be used as the multilayer film which means that the adjusting layer and the multilayer film may comprise different material, (please see column 4, line 21).

This reference has therefore anticipated the claims.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. **Claims 2, 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over the patent issued to Chung.**

The tunable etalon filter taught by **Chung** as applied in claim 1 above has met all the limitations of the claims. This reference however does not teach explicitly about having the temperature adjusting layer being placed *directly* on the substrate. However one can view the multilayer (44, Figure 2) as the “substrate layer” and the spacer layer (42) is then interposed between the multilayer film (46) and the substrate (44) and directly formed on the “substrate”.

With regard to claim 4, this reference also does not teach to include a plurality of adjusting layers. However the ideas of having the layer with temperature adjustable refractive index is explicitly taught in the cited reference, it would have been obvious to one skilled in the art to modify the filter arrangement by having more than one layer of temperature adjustable refractive index so that the temperature related wavelength shift may be adjusted with more degrees of freedom.

With regard to claim 5, although this reference does not teach that the material for the adjusting layer or spacer layer to be different from the layer materials of the multilayer film such modification would have been obvious to one skilled in the art since Chung has already taught the *condition* for the adjusting layer to work to modify the system to use a different yet suitable material would have been obvious modification to one skilled in the art for the benefit of using other material that would provide an alternative filter arrangement. It also has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. In re Leshin, 125 USPQ 416.

Art Unit: 2872

Double Patenting

8. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

9. **Claims 1-8 are provisionally** rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-5 and 7 of **copending Application No. 10/346,951**. Although the conflicting claims are not identical, they are not patentably distinct from each other because an optical filter having a multiplayer thin film that is comprised of alternatively stacked dielectric layers and an adjusting layer for adjusting temperature shift of the wavelength of the light filtered by the filter. The thickness measurement error due to the temperature variation as recited in the co-pending application is the same temperature effect as in the instant application.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

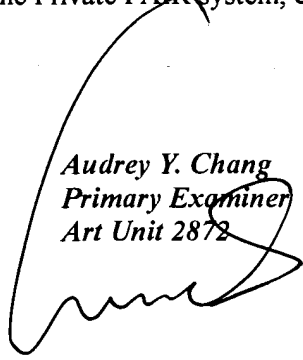
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Audrey Y. Chang whose telephone number is 571-272-2309. The examiner can normally be reached on Monday-Friday (8:00-4:30), alternative Mondays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Drew Dunn can be reached on 571-272-2312. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2872

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



*Audrey Y. Chang
Primary Examiner
Art Unit 2872*

A. Chang, Ph.D.